# SHSD Job Risk Assessment

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| **Job Number:** SHSD- JRA- 01<br>**Job Title:** HEPA Filter Surveillance Testing In-place systems & vacuum cleaners | **Point Value →<br>Parameter ↓** | **1** | **2** | **3** | **4** | **5** |
| **Job Description:** Operation of a particle generator and photo-particulate analyzer to measure the penetration of Emery 3000 aerosol through HEPA filters to determine the filtration efficiency. | **Frequency (B)** | **≤once/year** | **≤once/month** | **≤once/week** | **≤once/shift** | **>once/shift** |
| **Name(s) of Specific Application Risk Team Members:**<br>R. Wilson, R. Selvey | **Severity (C)** | **First Aid Only** | **Medical Treatment** | **Lost Time** | **Partial Disability** | **Death or Permanent Disability** |
| **Training Procedures List (Optional):**<br>Applicable Standard Operating Procedures: IH62200, IH62300, IH62350<br>Approved by: R. Selvey<br>Date: 02/28/06 Rev. #: 0 | **Likelihood (D)** | **Very Unlikely** | **Unlikely** | **Possible** | **Probable** | **Multiple** |
| **Stressors (if applicable, please list all)** Lighting; walking surface conditions; outdoor weather conditions | | | **Reason for Revision (if applicable):** | | | **Comments:** |

| | | Without Controls | | | | | Before Additional Controls | | | | | | | After Additional Controls | | | | | | | |
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| **Activity** | **Hazard** | # of People A | Frequency B | Severity C | Likelihood D | Risk* AxBxCxD | **Control(s)** | **Stressor** | **# of People A** | **Frequency B** | **Severity C** | **Likelihood D** | **Risk* AxBxCxD** | Control(s) Added to Reduce Risk | Stressors | # of People A | Frequency B | Severity C | Likelihood D | Risk* AxBxCxD | % Risk Reduction |
| Loading equipment into and out of the transportation vehicle (aerosol generator, meter, cart, hoses, sampling hose, regulator) | ergonomics- lifting injury, slips, trips, falls, excess bicycle storage | 1 | 3 | 3 | 3 | 27 | Duplicate cylinders are left at most test location to risk moving and lifting cylinders; house air is used when possible, heavy equipment boxes have handles for lifting; hand truck is owned by SHSD, cylinder carts at testing sites. | N | 1 | 3 | 3 | 2 | 18 | | | | | | | | |
| | | | | | | | | Y | 1 | 3 | 3 | 3 | 27 | | | | | | | | |
| Driving to and from the test site | Automobile accident- impact injury | - | - | - | - | - | See driving JRA for site. SHSD has no additional risk in our operation. All cylinders are delivered to test site or house air is used. | - | - | - | - | - | - | | | | | | | | |
| Compressed gas usage for aerosol generator | rapid pressure release | 1 | 3 | 3 | 4 | 36 | Regulator on cylinder, regulator on generator, Compressed air is used | N | 1 | 3 | 3 | 2 | 18 | | | | | | | | |

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| Operation of the aerosol generator and test meter | toxic chemicals in aerosol liquid | 2 | 3 | 4 | 2 | 48 | Replacement of DOP with Emery 3000 low toxicity aerosol | N | 2 | 3 | 1 | 1 | 6 | | | | | | | | |
| | noise | 1 | 3 | 1 | 1 | 3 | no controls needed for test apparatus only | N | 1 | 3 | 1 | 1 | 3 | | | | | | | | |
| Operation of vacuum cleaners | noise | 1 | 3 | 3 | 4 | 36 | No controls are currently used | N | 1 | 3 | 3 | 4 | 36 | PPE to be added to SOP, exposure monitoring to be done to determine future need for PPE | N | 1 | 3 | 2 | 2 | 12 | 200% |
| Hazards of the testing area; Work in areas with contamination issues | insect sting- hornet, wasp, bees | 1 | 3 | 2 | 4 | 24 | no controls in place now, tester leaves areas if insects encountered | N | 1 | 3 | 2 | 4 | 24 | Use Flying Insect Spray | N | 1 | 3 | 2 | 2 | 12 | 100% |
| | environmental factors- heat stress, high winds, snow/ice | 1 | 3 | 3 | 4 | 36 | test scheduled when conditions satisfactory & postponed is weather bad, no testing if heat stress alert issued | Y | 1 | 3 | 2 | 2 | 12 | | | | | | | | |
| | Noise from equipment in test area | 2 | 3 | 2 | 4 | 48 | PPE is used when area is posted | N | 2 | 3 | 2 | 2 | 24 | Add requirement to use PPE in all test areas to SOP IH62300 | N | 2 | 3 | 2 | 2 | 24 | 0 |
| | Radiological & chemical residues in and on duct work | 2 | 3 | 2 | 3 | 36 | RWP used in contamination areas, gloves/booties when required, Testing Assistant is PI or RCT with high knowledge of area and rad experience | N | 2 | 3 | 2 | 2 | 24 | | | | | | | | |
| Accessing and working on the roofs | Elevated work-moving equipment to higher levels – 25 lbs meter | 1 | 3 | 5 | 3 | 45 | Step ladder is used for access in some cases, summer schedule is used for improved weather | Y | 1 | 3 | 5 | 3 | 45 | Policy to hoist instead of carrying equipment up ladder is needed in IH62350, more controls needed (see below) | | | | | | | |
| | | | | | | | | N | 1 | 3 | 5 | 2 | 30 | | | | | | | | |
| | Fall from elevated surface- up to 2.5 stories | 1 | 3 | 5 | 3 | 45 | Fall protection is not in use, two locations require work within 5 feet of edge (not acceptable, | Y | 1 | 3 | 5 | 3 | 45 | fall protection device may be needed, see | Y | 1 | 3 | 5 | 2 | 30 | 50% |

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| | | | | | | | see below) | N | 1 | 3 | 5 | 3 | 45 | below | | | | | | | |

**Further Description of Controls Added to Reduce Risk:**

- SHSD IH Group Policy on minimum PPE for IH Group members for in-place testing on roofs needs to be modified to: Safety Glasses with Side Shields, Safety Shoes (and Hard hat for construction areas), fall protection for work within 5 feet of edge.
- Bldg 830 has poor access- requiring use of an un-caged fixed ladder for >20ft (unacceptable) or the use of a temporary straight ladder for an 8 ft rise (which may not always be available.) For this case, SHSD needs to have a straight ladder permanently locked at the building for use at the safer entry location.
- Work on Bldg 801 roof may involve entry to within a few feet of the edge on a 20+ foot fall. An evaluation by a fall protection expert of this operation will be requested.
- The current practice is to carry the 25 lb test meter up the ladder with one hand while climbing ladders. This practice will be evaluated by a fall protection expert and possibly replaced with a portable hoist or permanent hoists at the problem sites.

**Lesson Learned from this Risk Assessment:**

- Fall protection on this job has been under-analyzed in the past. Controls may be missing and a potential fall could be a real issue. Management action needs to be done. [status: email requesting action sent to SEG on 2/28/06].

| ***Risk:** | **0 to 20** | **21 to 40** | **41-60** | **61 to 80** | **81 or greater** |
|---|---|---|---|---|---|
| | **Negligible** | **Acceptable** | **Moderate** | **Substantial** | **Intolerable** |